



**UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/223,472	12/30/98	LEE	K 042390.P6604

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EXAMINER

KEEHAN, C

ART UNIT	PAPER NUMBER
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1741

DATE MAILED:

05/22/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/223,472

Applicant(s)

LEE, KEVIN J.

Examiner

Christopher M. Keehan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 18, 19 and 21-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 18, 19, 21-38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
 2. ☐ received in Application No. (Series Code / Serial Number) ____.
 3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6
- 18) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

Claims 1-5 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori (5,443,707). The rejection is as set forth in the prior office action.

Response to Arguments

Applicant's arguments filed 3/14/2000 have been fully considered but they are not persuasive. It is the Examiner's position that the Applicant's arguments are not commensurate with the scope of the claims because they are broader than the scope of the claims. Further, Applicant has not shown how the method of Mori differs from the instantly claimed method.

Regarding amended Claims 1 and 18, Mori discloses a method for applying a liquid material onto a substrate surface by placing the substrate surface within an enclosure (col.3, lines 22-25), introducing liquid material into the enclosure (col.3, lines

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38-41), and directing the liquid material angularly toward the substrate surface (col.3, lines 41-46) so that the liquid material flows rotationally upon contact with the substrate surface (col.3, lines 46-50). It is the Examiner's position that "directing the liquid angularly" as instantly claimed teaches the application of the liquid at any angle.

Therefore, the language "outlets...which direct liquid 70 at an angle from perpendicular" (Applicant's Specification, page 5, lines 8-9) also teaches that an angle from perpendicular can also include perpendicular because 0° is an angle, and 0° from perpendicular is perpendicular. Further, it is the Examiner's position that Applicant has not claimed any criticality of rotational flow of the liquid and how the rotational flow of Mori (col.3, lines 46-50) differs from that as instantly claimed.

Claim Rejections - 35 USC § 103

Claims 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of Sato et al. (4,981,559). The Examiner has withdrawn this rejection based on Applicant's arguments

New Claim Rejections - 35 USC § 102

Claims 19 and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori (5,443,707). Mori is as set forth and incorporated herein. Mori discloses introducing a liquid by spraying the liquid out of a plurality of spray outlets (col.3, lines

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41-46). It is the Examiner's position that spray is defined as a jet of vapor or finely divided liquid (Merriam-Webster's Collegiate Dictionary, tenth edition), which is disclosed in the method of Mori when the flow of electroplating solution passes through the mesh anode.

Regarding Claim 21, Mori discloses spray outlets angled at approximately 20 to 60 degrees from vertical (see Figure 6).

Regarding Claims 22 and 23, Mori discloses liquid directed radially outward with respect to the center of the substrate surface, and liquid directed circumferentially with respect to a perpendicular direction toward the substrate surface (col.4, lines 20-34), respectively.

Regarding Claims 24-26, Mori discloses at least one of a plurality of spray outlets pointed in a perpendicular direction toward the center of the substrate surface, the plurality of spray outlets includes at least four spray outlets forming a cross pattern, and the plurality of spray outlets includes at least one spray outlet located at the center of the cross pattern (col.5, lines 42-46), respectively.

Regarding Claims 27-33, the same reasoning set forth above for Claims 19 and 21-26 also applies to Claims 27-33 as the subject matter is essentially the same, except for the limitation as set forth in Claim 18.

Claims 34-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori (5,443,707). Regarding Claim 34, Mori discloses placing a semiconductor substrate

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surface within an enclosure (col.3, lines 22-25), providing a nozzle having a plurality of spray outlets, wherein the spray outlets are angled at approximately 20 to 60° from vertical (col.3, lines 41-46, and see Figure 6), introducing a liquid material into the nozzle (col.5, lines 21-24), and directing the liquid material through the plurality of spray outlets toward the substrate surface (col.3, lines 41-46) so that the liquid material flows rotationally upon contact with the substrate surface (col.3, lines 46-50). It is the Examiner's position that nozzle is defined as a projecting vent of something (Merriam-Webster's Collegiate Dictionary, tenth edition).

Regarding Claims 35-38, the same reasoning set forth above for Claims 23-26 also applies to Claims 35-38 as the subject matter is essentially the same, except for the limitation as set forth in Claim 34.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Keehan whose telephone number is (703) 305-2430. The examiner can normally be reached Monday through Thursday from 6:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathryn Gorgos, can be reached on (703) 308-3328. The fax phone

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number for the organization where this application or proceeding is assigned is (703) 305-7719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Christopher Keehan *CKK*

May 17, 2000

Kathryn Gorgos
Kathryn Gorgos
Supervisory Patent Examiner
Technology Center 1700